

Q1
cont

recipient cell expresses said suppressor of apoptosis, such that said cell line, when infected with a vector engineered to express a recombinant protein, expresses said recombinant protein at a higher level than that of a parental cell line, from which said cell line comprising said suppressor of apoptosis is derived.

Q2

7. (Amended) The insect cell line of claim 1 wherein said recipient cell that expresses said suppressor of apoptosis is also transfected with a recombinant DNA for expression of a recombinant protein.

10. (Amended) A cell line comprising:

Q3

a) a recipient cell wherein said recipient cell has been stably transfected with a first recombinant DNA expression vector comprising a recombinant viral DNA that encodes a suppressor of apoptosis such that said recipient cell expresses said suppressor of apoptosis, such that said cell line, when infected with a vector engineered to express a recombinant protein, expresses said recombinant protein at a higher level than that of a parental cell line, from which said cell line comprising said suppressor of apoptosis is derived.

Q4

19. (Amended) The cell line of claim 10 wherein said cell line that expresses said suppressor of apoptosis is infected by a baculovirus and supports the replication of said baculovirus.

26. (Amended) A method of developing a cell line containing a suppressor of apoptosis, comprising the steps of:

- Q5
- a) isolating a recombinant DNA that encodes said suppressor of apoptosis;
- b) constructing a first recombinant DNA expression vector wherein said recombinant DNA is cloned into said first recombinant DNA expression vector such that said recombinant DNA is capable of being expressed in a host;
- c) delivering said first recombinant DNA expression vector into at least one host cell;

- 95 cut
- d) exposing said host cell to an inducer of apoptosis; and
- e) selecting said cell lines from said host cell which survives exposure to said inducer of apoptosis, such that said selected cell lines, when infected with a vector engineered to express a recombinant protein, express said recombinant protein at a higher level than that of a parental cell line, from which said selected cell lines comprising said suppressor of apoptosis are derived.
- B

33. (Amended) The method of claim 32 wherein said cell line is derived from a pre-existing parental [insect] cell line selected from the group consisting of:

- 96
- a) Sf9;
- b) IPLB-Sf21;
- c) BTI-Tn5B1-4;
- d) BTI-MG-1;
- e) Tn368;
- f) Ld652Y;
- g) BTI-EAA;
- h) any cell line derived from the cell lines listed at a) through g) above; and
- i) any other cell line susceptible to baculovirus infection.
- B

36. (Amended) The method of claim 36, wherein said cell line that expresses said suppressor of apoptosis is infected by a baculovirus and supports the replication of said baculovirus.

37

Please add new claims 37-44, as follows:

37. (New) A baculovirus expression system for expressing a recombinant protein, comprising:

38

B

- AS
only
- a) a baculovirus that has a functional p35 gene, and is engineered to express a recombinant protein;
- b) a cultured cell line that is susceptible to infection by said baculovirus, and is engineered by transfection with a first recombinant DNA expression vector to express a recombinant DNA that encodes a suppressor of apoptosis, such that said recombinant DNA is cloned into said first recombinant DNA expression vector such that said recombinant DNA is capable of being expressed in said cell line;
- c) said first recombinant DNA expression vector being delivered into at least one cell of said cultured cell line; and
- d) said at least one cell being infected by said baculovirus;
- e) such that apoptosis is inhibited, and said engineered cell line expresses said recombinant protein at a higher level than that of a parental cell line, from which said engineered cell line is derived, when said engineered cell line is infected by said engineered baculovirus that includes a functional p35 gene.
38. (New) The expression system of claim 37, further comprising a second recombinant DNA expression vector comprising a recombinant DNA that encodes a selectable marker.
39. (New) A method of developing a cell line containing a suppressor of apoptosis, comprising the steps of:
- a) isolating a recombinant DNA that encodes said suppressor of apoptosis;
- b) constructing a first recombinant DNA expression vector wherein said recombinant DNA is cloned into said first recombinant DNA expression vector such that said recombinant DNA is capable of being expressed in said cell line;
- c) delivering said first recombinant DNA expression vector into at least one cell of said cell line;
- d) exposing said at least one cell to an inducer of apoptosis; and
- B

- e) selecting cell lines from said at least one cell which survives exposure to said inducer of apoptosis, such that said selected cell lines, when infected with a vector engineered to express a recombinant protein, express said recombinant protein at a higher level than that of a parental cell line, from which said selected cell lines comprising said suppressor of apoptosis are derived.
40. (New) The method of claim 39, further comprising the step of delivering into said at least one cell a second recombinant DNA expression vector comprising a recombinant DNA that encodes a selectable marker.
41. (New) A method of selecting a cell line for expression of recombinant proteins, comprising the steps of:
- a) isolating a first recombinant DNA that encodes a selectable marker;
 - b) constructing a first recombinant DNA expression vector, wherein said first recombinant DNA is cloned into said first recombinant DNA expression vector, such that said first recombinant DNA is capable of being expressed in said cell line;
 - c) delivering said first recombinant DNA expression vector into at least one cell of said cell line;
 - d) exposing said at least one cell containing said selectable marker to an appropriate selective agent;
 - e) selecting cell lines, derived from said at least one cell, which survive exposure to said selective agent;
 - f) isolating a second recombinant DNA that encodes a suppressor of apoptosis;
 - g) constructing a second recombinant DNA expression vector wherein said second recombinant DNA is cloned into said second recombinant DNA expression vector such that said second recombinant DNA is capable of being expressed in said cell line;

- h) delivering said second recombinant DNA expression vector into at least one cell of a selected cell line which survives exposure to said selective agent;
- i) exposing said at least one cell to an inducer of apoptosis; and
- j) selecting cell lines from said at least one cell which survives exposure to said inducer of apoptosis, such that said selected cell lines, when infected with a vector engineered to express a recombinant protein, express said recombinant protein at a higher level than that of a parental cell line, from which said selected cell lines comprising said selectable marker and said suppressor of apoptosis are derived.
42. (New) A method of selecting a cell line for expression of recombinant proteins, comprising the steps of:
- a) isolating a first recombinant DNA that encodes an antibiotic resistance marker;
- b) constructing a first recombinant DNA expression vector, wherein said first recombinant DNA is cloned into said first recombinant DNA expression vector, such that said first recombinant DNA is capable of being expressed in said cell line;
- c) delivering said first recombinant DNA expression vector into at least one cell of said cell line;
- d) exposing said at least one cell containing said antibiotic resistance marker to a selective concentration of an appropriate antibiotic;
- e) selecting cell lines, derived from said at least one cell, which survive exposure to said selective concentration of said antibiotic;
- f) isolating a second recombinant DNA that encodes a functional baculovirus p35 gene;
- g) constructing a second recombinant DNA expression vector wherein said second recombinant DNA is cloned into said second recombinant DNA expression vector

such that said second recombinant DNA is capable of being expressed in said cell line;

h) delivering said second recombinant DNA expression vector into at least one cell of a selected cell line which survives exposure to said selective agent;

i) exposing said at least one cell to actinomycin-D; and

j) selecting cell lines from said at least one cell which survives exposure to actinomycin-D, such that said selected cell lines, when infected with a vector engineered to express a recombinant protein, express said recombinant protein at a higher level than that of a parental cell line, from which said selected cell lines comprising said selectable marker and said suppressor of apoptosis are derived.

43. (New) A baculovirus expression system for expressing a recombinant protein, comprising:

a) a baculovirus that has a functional p35 gene, and is engineered to express a recombinant protein;

b) a cultured Sf9 cell line that is susceptible to infection by said baculovirus, and is engineered by transfection with a first recombinant DNA expression vector to express a recombinant DNA that encodes AcNPV p35, wherein said recombinant DNA is cloned into said first recombinant DNA expression vector such that said recombinant DNA is capable of being expressed in said cell line;

c) said first recombinant DNA expression vector being delivered into at least one cell of said cultured cell line; and

d) said at least one cell being infected by said baculovirus;

e) such that apoptosis is inhibited, when said engineered cell line is infected by said baculovirus that includes a functional p35 gene.